

**REMARKS**

The Final Office Action mailed January 5, 2006, has been received and reviewed. Claims 11 through 18, 21 through 28 and 31 through 46 are currently pending in the application. Claims 11 through 18, 21 through 28 and 31 through 46 stand rejected. Applicants have amended Claim 31 and cancelled Claims 21-28 and 39-46. Applicants respectfully request reconsideration of the application as proposed to be amended herein.

**35 U.S.C. § 102(e) Anticipation Rejections**

**Anticipation Rejection Based on U.S. Patent No. 5,656,886 to Westphal et al.**

Claims 11 through 13, 15, 17, 18, 21 through 23, 25, 27, 28, 31 through 33, 35, 37 through 41, 43, 45 and 46 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Westphal et al. (U.S. Patent No. 5,656,886). Applicants respectfully traverse this rejection, as hereinafter set forth.

The 35 U.S.C. § 102(e) anticipation rejections of Claims 21-23, 25, 27-28, 39-41, 43, and 45-46 are moot in light of the cancellation of Claims 21-28 and 39-46 herein.

Claim 11 is an independent claim and recites, in part: “a substrate; a cap layer disposed on said substrate; an anti-reflective coating...across an expanse of the cap layer...a conductive layer overlying said cap layer and anti-reflective coating; and an array of emitter tips.”

In order to anticipate a claim, a reference must expressly or inherently set forth each and every element of the claim. *See, Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Thus, in order to anticipate Claim 11, a single reference must expressly or inherently set forth an improved cathode substrate for a field emission display including: a substrate, a cap layer disposed on the substrate, an anti-reflective coating across an expanse of the cap layer, a conductive layer overlying the cap layer and anti-reflective coating, and an array of emitter tips.

The anticipation rejection proffered by the Office alleges that Westphal et al. describes each and every recitation of Claim 11. In particular, the Final Action alleges that Westphal et al.

describes, and illustrates, “a substrate 18...a cap layer (20) with a resistive layer 22 within it...a conductive layer (28) overlying the cap layer and anti-reflective coating and an array of emitters (32) formed from the conductive layer (28, see Fig 3 & Fig 4).” *See, Final Action* at p. 2.

However, Westphal et al. fails to describe each of such structures and at least each of the alleged structures in a single device, and thus fails to anticipate Claim 11.

The structure described by Westphal et al., and illustrated in Westphal et al.’s figure 4, includes a substrate 18, a cap layer 20, a resistive layer 22, and emitter tips 32. The Final Action alleges that the resistive layer 22 of Westphal et al. is equivalent to the anti-reflective coating recited in Claim 11. If the resistive layer 22 of Westphal et al., as illustrated in figure 4, is indeed considered to be an anti-reflective layer as alleged, then the emitter tips 32 of Westphal et al. overlie the alleged anti-reflective layer. In such a case, a conductive layer is **not** described by Westphal et al. In particular, “a conductive layer overlying said cap layer and anti-reflective coating” as recited in Claim 11 is not described. Furthermore, figure 4 of Westphal et al. does not illustrate a conductive layer as recited. Nowhere in Westphal et al. is there described “a conductive layer overlying said cap layer and anti-reflective coating; and an array of emitter tips formed from said conductive layer” as recited in Claim 11.

In an attempt to compensate for the lack of description or illustration of a conductive layer as recited in Claim 11, the Final Action alleges that the cathode material 28 illustrated in Westphal et al.’s figure 3 anticipates the conductive layer recited in Claim 11. However, the cathode material 28 described by Westphal et al. and illustrated in figure 3 is used to form the emitter tips 32 and does not remain on the structure as a conductive layer. Furthermore, the only “layering” of the cathode material 28 occurs over the protective layer 24 of Westphal et al. In addition, when emitter tips 32 are formed, no layer exists because each of the emitter tips 32 are isolated by the protective layer 24 overlying the resistive layer 22 which is formed between the emitter tips 32. Therefore, a “conductive layer overlying said cap layer and anti-reflective coating” is not described by Westphal et al. in the same manner as recited in Claim 11. The lack of such description precludes an anticipation rejection of Claim 11.

In response to Applicants’ previous arguments regarding the anticipation of Claim 11, the Final Action alleges that “Cap layer of Westphal et al. consists of layer 20 and the antireflective

layer (resistive layer 22) disposed on it, which is same as applicant's Fig 3 & Fig 4." *See, Final Action* at p. 6. However, the combination of Westphal et al.'s layer 20 and resistive layer 22 do not describe a structure that is the same as the structures illustrated in Applicants' figures 3 and 4. In particular, the structure of Westphal et al. is lacking at least one layer, either a conductive layer or an anti-reflective layer as illustrated in Applicants' figures and recited in the Claims at issue.

Placing Applicants' figures 3 and 4 side-by-side with the figures of Westphal et al., it is blatantly apparent that the structures of Westphal et al. are lacking at least one structural layer when compared to Applicants' structures. As illustrated in Applicants' figure 3, the recited cap layer 42 comprises a cap material 44 and an anti-reflective coating 45. A conductive layer 36 overlies the cap layer 42. Thus, the structure illustrated in Applicants' figure 3 includes a substrate 34, a cap layer 42, comprising a cap material 44 and an anti-reflective coating 45, a conductive layer 36 and an insulator 22 having tips 38 projecting from the conductive layer 36 through the insulator 22. Similarly, the cap layer 46 illustrated in Applicants' figure 4 includes a cap material 48 and a light blocking layer 50 with a conductive layer 36 overlying the cap layer 46. The cap layers 42 and 46 illustrated in Applicants' figures 3 and 4 therefore include two layers: a layer of cap material (44 and 48 respectively) and a layer of anti-reflective coating 45 or a light blocking layer 50. A conductive layer 36 overlies the cap layers 42 and 46 illustrated in Applicants' figures 3 and 4. Applicants assert that the structures of Westphal et al. fail to describe such two-component cap layers if the resistive layer (22) of Westphal et al. is considered a conductive layer, or alternatively, fail to describe a conductive layer if the resistive layer (22) is considered an anti-reflective layer or light blocking layer.

If the Office alleges that the structure of Westphal et al.'s figure 3 anticipates Claim 11, then Applicants point out that figure 3 of Westphal et al. does not illustrate or describe "an array of emitter tips formed from said conductive layer" as recited in Claim 11. If instead, the Office alleges that the structure of figure 4 of Westphal et al. anticipates Claim 11, then Applicants point out that figure 4 fails to illustrate or describe "a conductive layer overlying said cap layer and anti-reflective coating" as recited in Claim 11. In either case, Westphal et al. fails to expressly or inherently describe the "improved cathode substrate for a field emission display" as

recited in Claim 11, thereby precluding an anticipation rejection of Claim 11.

Further in response to Applicants' previous arguments with respect to the anticipation of Claim 11, the Office alleges that "an antireflective property and electrical property of a material are not mutually exclusive. Since resistive layer is made of a material, which has anti-reflection property, it will act as antireflection coating and also has its electrical properties." *See, Final Action* at p. 5. To the extent that the Office may be arguing that Westphal et al.'s resistive layer (22) acts as both an anti-reflective layer and a conductive layer for the purposes of anticipation, such an argument does not support an anticipation rejection. Claim 11 does not recite a layer which is both anti-reflective and conductive. Rather, Claim 11 includes recitations of both an anti-reflective layer and a conductive layer. Westphal et al. does not describe a structure having **both** an anti-reflective layer and a conductive layer and cannot therefore anticipate Claim 11. *See, Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

For at least the foregoing reasons, the 35 U.S.C. § 102 anticipation rejection of Claim 11 should be withdrawn.

Claims 12, 13, 15, 17, and 18 depend from Claim 11. As dependent claims, each claim inherits the recitations of the independent claim from which they depend. Thus each of dependent Claims 12, 13, 15, 17, and 18 inherit the recitations of Claim 11 which are not anticipated by Westphal et al. The failure of Westphal et al. to anticipate Claim 11 also precludes an anticipation rejection of dependent Claims 12, 13, 15, 17, and 18.

Although the Final Action argues that Claim 15 is obvious in light of Westphal et al., Claim 15 is formally rejected under 35 U.S.C. § 102(e) as being anticipated by Westphal et al. Applicants respectfully traverse this rejection.

Claim 15 is independently allowable over the 35 U.S.C. § 102(e) anticipation rejection because Westphal et al. does not describe a cap layer "selected from the group consisting of silicon carbide, and diamond-like carbon" as recited in Claim 15. Without such description, Westphal et al. cannot anticipate Claim 15. *See, Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Applicants respectfully request that the anticipation rejection of Claim 15 under 35 U.S.C. § 102(e) be withdrawn.

Claim 31 is an independent claim and is amended herein. Amended Claim 31 recites, in

part, “a substrate; a cap layer...a light blocking layer...a conductive layer on the light blocking layer; and an array of emitter tips in the conductive layer....” An illustration of the structure recited in Claim 31 is shown in Applicants’ figure 4.

Westphal et al. fails to describe a structure, such as the recited “improved cathode substrate for a field emission display,” having a cap layer, a light blocking layer, a conductive layer on the light blocking layer, and an array of emitter tips in the conductive layer as recited in Claim 31. As previously detailed, Westphal et al. fails to describe a structure that anticipates the structure illustrated in Applicants’ figure 4. In particular, Westphal et al. fails to describe a structure having both a light blocking layer and a conductive layer. Even if the resistive layer (22) of Westphal et al. may be considered a light blocking layer as alleged in the Final Action, Westphal et al. fails to describe a conductive layer on the resistive layer. As detailed *supra*, the cathode material (28) used to form the emitter tips (32) of Westphal et al. does not form a conductive layer over the cap layer. Likewise, the cathode material (28) of Westphal et al. fails to form a conductive layer on a light blocking layer as recited in Claim 31.

The failure of Westphal et al. to describe the recitations of Claim 31 in as complete detail as contained in Claim 31 precludes an anticipation rejection of Claim 31. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Applicants respectfully request the withdrawal of the 35 U.S.C. § 102(e) anticipation rejection of Claim 31.

Claims 32, 33, 35, 37, and 38 depend from Claim 31. As dependent claims, each claim inherits the recitations of the independent claim from which they depend. Thus each of dependent Claims 32, 33, 35, 37, and 38 inherit the recitations of Claim 31 which are not anticipated by Westphal et al. The failure of Westphal et al. to anticipate Claim 31 also precludes an anticipation rejection of dependent Claims 32, 33, 35, 37, and 38.

For at least the foregoing reasons, Applicants respectfully request the withdrawal of the 35 U.S.C. § 102(e) anticipation rejection of Claims 11 through 13, 15, 17, 18, 31 through 33, 35, 37, and 38.

### **35 U.S.C. § 103(a) Obviousness Rejections**

#### Obviousness Rejection Based on U.S. Patent No. 5,656,886 to Westphal et al.

Claims 14, 16, 24, 26, 34, 36, 42 and 44 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Westphal et al., as applied to Claim 11 (U.S. Patent No. 5,656,886).

Applicants respectfully traverse this rejection, as hereinafter set forth.

The 35 U.S.C. § 103(a) obviousness rejection of Claims 24, 26, 42, and 44 is rendered moot by the cancellation of Claims 21-28 and 39-46 herein.

Claims 14, 16, 34, and 36 each depend from a non-obvious independent claim. In particular, Claims 14 and 16 depend from Claim 11 and Claims 34 and 36 depend from Claim 31. Neither Claim 11 nor Claim 31 is obvious. As dependent claims depending from non-obvious independent claims, Claims 14, 16, 34, and 36 are also non-obvious. *See*, M.P.E.P. § 2143.03 (citing, *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)( if an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious)). Applicants respectfully request the withdrawal of the 35 U.S.C. § 103(a) obviousness rejection of Claims 14, 16, 34, and 36.

Although Claim 15 is not formally rejected under 35 U.S.C. § 103(a), the Final Action argues that the recitations of Claim 15 would be obvious because “silicon nitride and diamond like carbon are art recognized equivalent for using cap or protective layer.” *See, Final Action* at p. 4. There is no documentary support offered to bolster this allegation and this is a new rejection which Applicants have not had the opportunity to previously address.

The Office must satisfy the “substantial evidence” standard promulgated by the Administrative Procedure Act. *See*, M.P.E.P. § 2144.03. “Ordinarily, there must be some form of evidence in the record to support an assertion of common knowledge.” *See*, M.P.E.P. § 2144.03(B)(citing, *Lee*, 277 F.3d at 1344-45 and *Zurko*, 258 F.3d at 1386). No evidence supporting the alleged equivalency claimed by the Office has been presented. Thus, the rejection of Claim 15 under 35 U.S.C. § 103(a), which is apparently a new rejection, is not supported by any evidence.

Applicants maintain that Claim 15 is not anticipated by Westphal et al. and is not obvious

in light of Westphal et al. or the knowledge generally available to one of ordinary skill in the art because there is no evidence supporting the allegation that the prior art teaches or suggests the equivalency alleged by the Office. For at least the foregoing reasons, the 35 U.S.C. § 103(a) obviousness rejection of Claim 15 should be withdrawn.

### ENTRY OF AMENDMENTS

The proposed amendments to Claim 31 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application. Further, the amendments do not raise new issues or require a further search. Finally, if the Examiner determines that the amendments do not place the application in condition for allowance, entry is respectfully requested upon filing of a Notice of Appeal herein.

### CONCLUSION

Claims 11-18 and 31-38 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, the Examiner is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



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